

	Type	L #	Hits	Search Text	DBs
1	BRS	L1	50655	white or multicolor	JPO
2	BRS	L2	0	1 and gaas and znse	JPO
3	BRS	L3	0	1 and (III adj V) and (II adj VI)	JPO
4	BRS	L4	8	1 and (III adj V)	JPO
5	BRS	L5	2	1 and (II adj VI)	JPO
6	BRS	L6	1160	white or multicolor	IBM_TDB
7	BRS	L7	0	6 and gaas and znse	IBM_TDB
8	BRS	L8	2	6 and gaas	IBM_TDB
9	BRS	L9	0	6 and (III adj V) and (II adj VI)	IBM_TDB

	Type	L #	Hits	Search Text	DBs
1	BRS	L1	3019	white same LED	USPAT
2	BRS	L2	184	1 and stacked	USPAT
3	BRS	L3	302	stacked and Gaas and ZnSe	USPAT
4	BRS	L4	5	1 and 3	USPAT
5	BRS	L5	148	stacked and Gaas and CdSe	USPAT
6	BRS	L6	1	1 and 5	USPAT
7	BRS	L7	297	multicolor same LED	USPAT
8	BRS	L8	6	7 and gaas and znse	USPAT
9	BRS	L9	29997	(white or multicolor) and LED	USPAT
10	BRS	L10	98	9 and GaAs and ZnSe	USPAT
11	BRS	L11	26	10 and stacked	USPAT
12	IS&R	L12	1	("6163038").PN.	USPAT
13	BRS	L13	1	6163038.URPN.	USPAT
14	BRS	L14	4	("5237182"   "5955835"   "5998803"   "5998925").PN.	USPAT
15	BRS	L15	83846	light adj emitting	USPAT
16	BRS	L16	4987	15 and stacked	USPAT
17	BRS	L17	149	16 and Gaas and ZnSe	USPAT
18	BRS	L18	27204	15 adj diodes	USPAT
19	BRS	L19	198	18 and (GaAs same ZnSe)	USPAT
20	BRS	L20	184	stacked and (GaAs same ZnSe)	USPAT
21	BRS	L21	105	15 and 20	USPAT
22	BRS	L22	4706	stacked adj light emitting adj devices	USPAT
23	BRS	L23	189	22 and gaas and znse	USPAT
24	BRS	L24	16	22 with gaas with znse	USPAT
25	BRS	L25	1	stacked adj light adj emitting adj devices	USPAT

	Type	L #	Hits	Search Text	DBs
26	BRS	L26	59	stacked with (light adj emitting adj devices)	USPAT
27	BRS	L27	3	26 same gaas same znse	USPAT
28	BRS	L28	0	26 same (III adj V) same (II adj VI)	USPAT
29	BRS	L29	2224	(III adj V) same (II adj VI)	USPAT
30	BRS	L30	17	1 and 29	USPAT
31	BRS	L31	3019	white same LED	USPAT
32	BRS	L32	17	29 and 31	USPAT

## Letter

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# High-Efficiency ZnCdSe/ZnSSe/ZnMgSSe Green Light-Emitting Diodes

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Green light-emitting diodes (LEDs) were fabricated employing a ZnCdSe/ZnSSe triple quantum-well (TQW) active region surrounded by ZnMgSSe cladding layers grown on an *n*-type (1 0 0) GaAs substrate by molecular beam epitaxy (MBE). A 3.5 mW pure green emission was observed for the surface-emitting LED device at a peak wavelength of 513.3 nm (2.415 eV) with a spectral half-width of 11.7 nm (55 meV) under a 20 mA (4.6 V) direct current at room temperature (25°C). These correspond to an external quantum efficiency of 7.2%, a power conversion efficiency of 3.8%, a luminous current efficiency of 66 lm/A, and a luminous efficiency of 14 lm/W.

Key words : ZnCdSe, ZnSSe, ZnMgSSe, ZnSe, ZnTe, high efficiency, green, LED

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